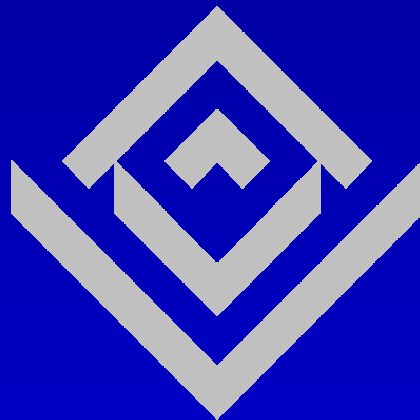


Canadian Science Centre for Human and Animal Health

Operation and Maintenance of a High Containment Laboratory



2001 Conference

labs for the
21st century





Canadian Science Centre **Les Wittmeier**

- **Commissioning**
- **PWGSC – O & M team**
- **Rendering and Biowaste system**
- **Electrical Systems**
- **Chemical Showers**
- **CMMS**



Commissioning

- **Team members**
- **Duties and activities**
- **Types of documentation/process**
- **Was it worth the effort?**



Operations and Maintenance

- **Team Makeup**
 - Management
 - Technical
 - Operational
 - Trades and Specialty
 - Other
- **Facility Concept**



Rendering and Biowaste System I

- Overview of system
 - Selected in lieu of an incinerator
 - Secondary treatment of effluent from BSL3 and BSL 4 laboratories
 - Total of 4 vessels
 - Effluent to Municipal sewer



Rendering and Biowaste System





Rendering and Biowaste System





Rendering and Biowaste System

- **Enhancements**
 - Seals and shaft removal
 - Coating of Interior
 - Valves
 - Compressed Air Supply
 - Other
- **ISO Pilot**



Electrical Systems I

- Normal Power
- Emergency Power
- UPS
- Lighting and Lighting Control
- Power Quality



Electrical Systems II

- **Fire Alarm**
- **Security**
- **Communications**
- **Variable Frequency Drives**
- **Misc. Items**



Chemical Showers

- **Serve the BSL4 laboratories and large animal room**
- **Two systems, one for each client**
- **Automatic and Manual Operation**
- **Upgrades since move in**



Chemical Showers





Computerized Maintenance Management System

- **History at the CSCAH**
- **Functions/Capabilities – Current**
- **Functions/Capabilities – Developing**
- **Future items**



Canadian Science Centre

Gilles Tremblay

- **Architectural/ Mechanical**
- **Controls/ Instrumentation**
- **Energy Reductions**

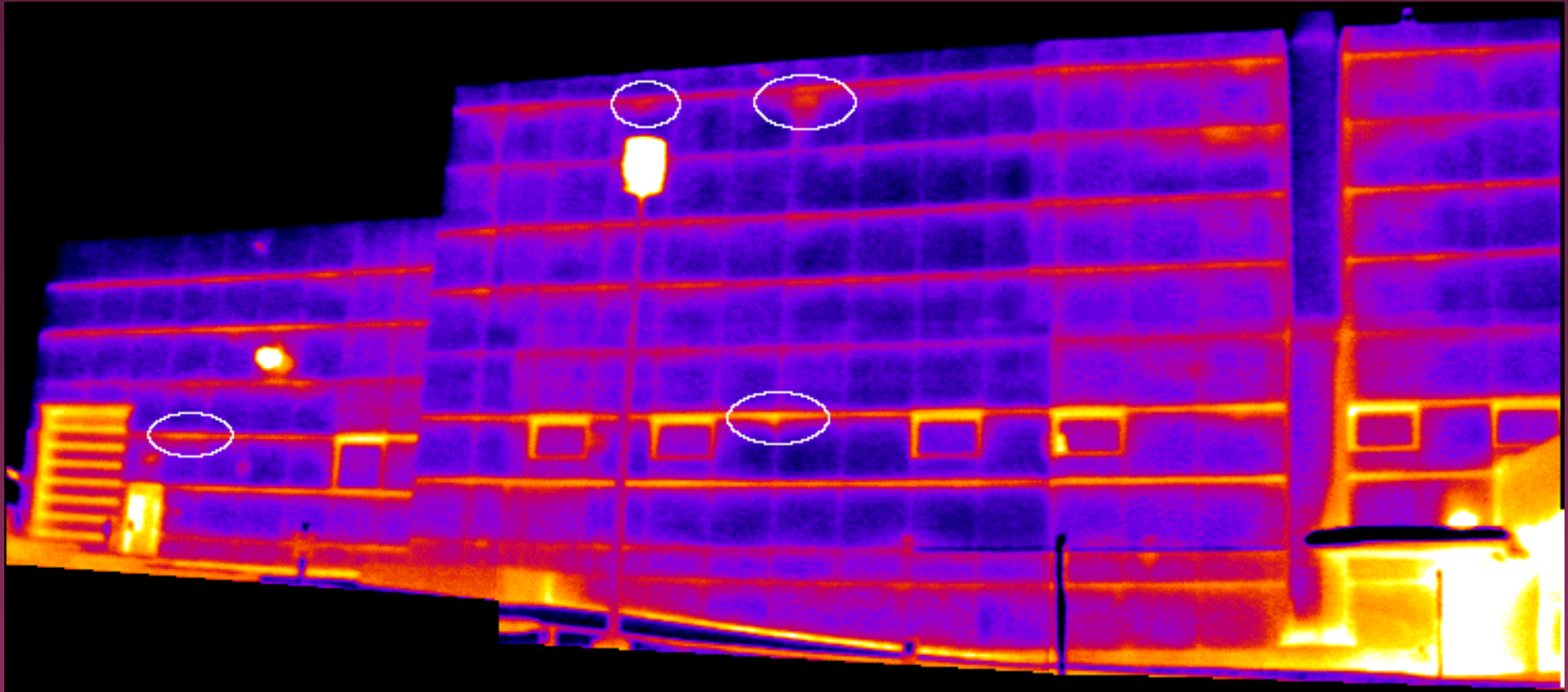


Architectural/ Mechanical

- **Epoxy Coatings**
- **Peel and Stick**
- **Windows**
- **Bioseal Doors**
- **Building Envelope**



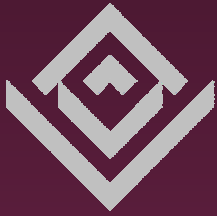
Thermo graphic Scan N Block, North Wall, East Section



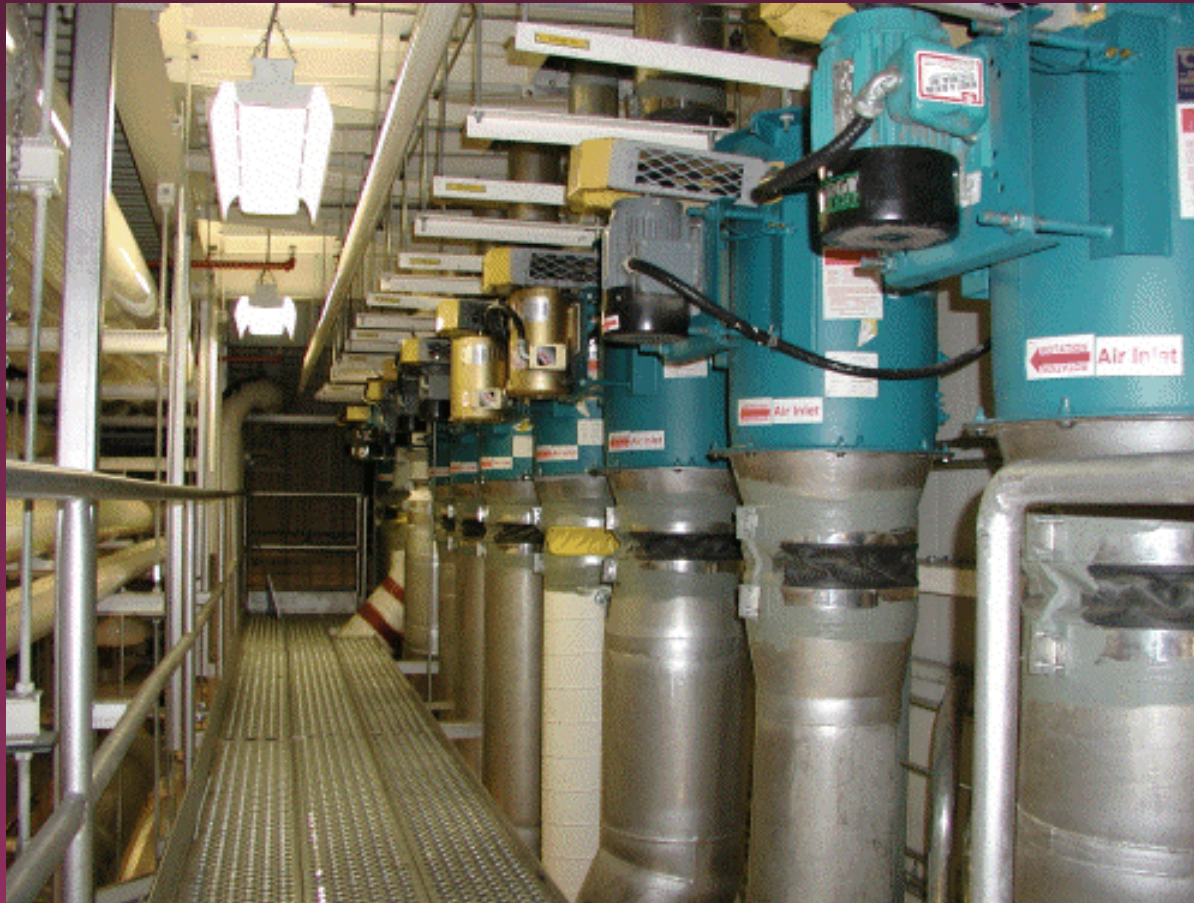


Architectural/ Mechanical

- Fan Systems
- Autoclaves
- Hydronic Piping
- Fume hood Fans



Fume hood Exhaust Fans H Block, South Tower, BSL2 Labs





Architectural/ Mechanical

- Boilers





Controls/ Instrumentation

- **DDC Systems/ Hardware**
- **Sensors/ Meters**
- **Calibration/ Tuning**
- **Control Strategies**

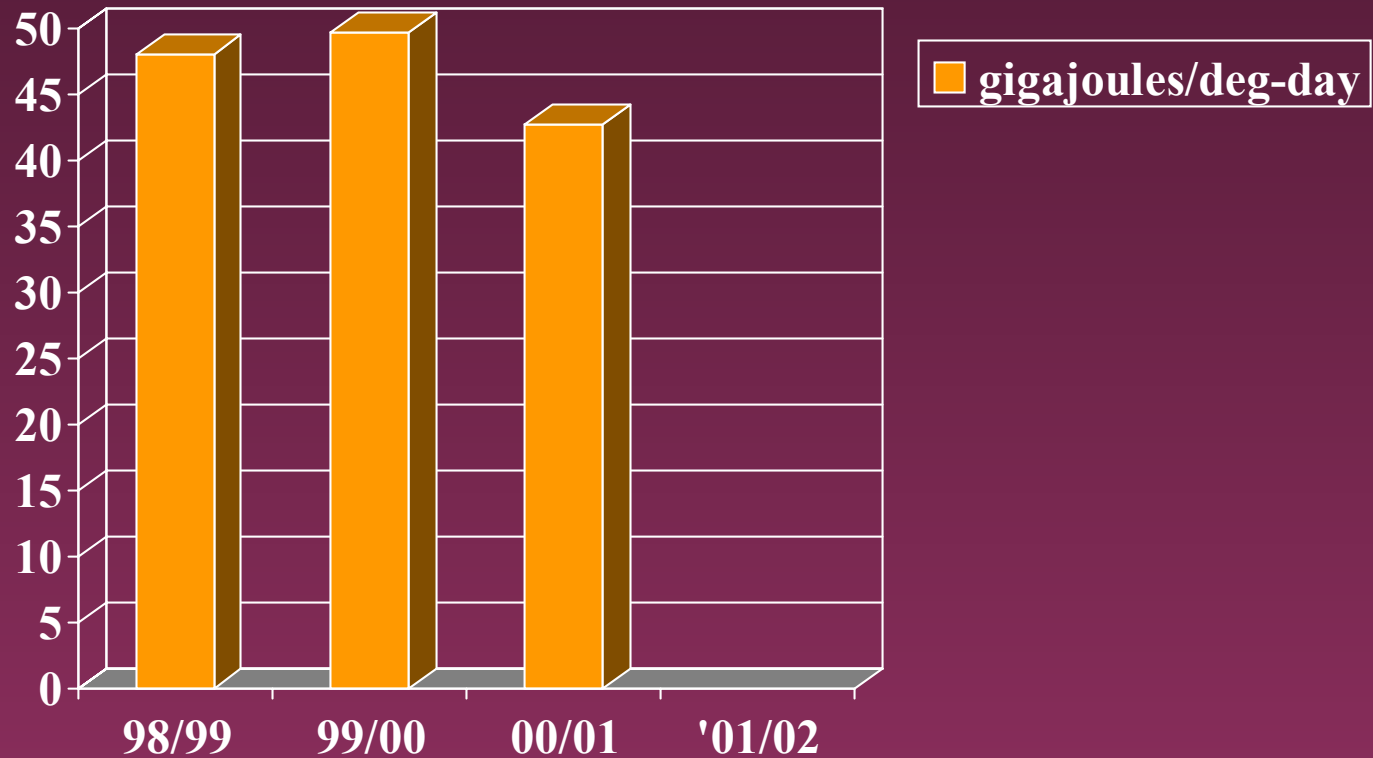


Energy/ Cost Reductions

- **To Date**
 - **Night Setbacks**
 - **Animal Cubicle Shutdowns**
 - **Peak Shaving**
 - **Lighting**
 - **Materials/ Technology**



Energy Reductions





Energy Reductions

- **Future**
 - Implement more Setbacks
 - Implement more Peak Shaving
 - Economizer Control
 - Heat Reclaim (fan systems)
 - Heat Reclaim (KSI cookers)
 - New Technologies